

CLAIMS

Please amend Claims 1-24 as follows:

1. (Currently Amended) A method for determining an auction format for a market, said method comprising the steps of:

selecting characteristics of said market;

selecting a relevant bidding model specifying past bidding behavior as a function of information held privately by a bidder and said characteristics of said market;

selecting at least a first and a second estimated structure of said market, wherein said first estimated structure of said market describes at least a first factor that affects how bidders behave and wherein said second estimated structure of said market describes at least a second factor that affects how bidders behave;

predicting a first bidding behavior utilizing said first estimated structure of said market, said characteristics of said market and said relevant bidding model;

predicting a first outcome of said market based on said first bidding behavior;

predicting at least a second bidding behavior utilizing at least said second estimated structure of said market, said characteristics of said market and said relevant bidding model;

predicting a second outcome of said market based on at least said second bidding behavior; and

evaluating said first outcome of said market and at least said second outcome of said market to determine [[an]] said auction format for said market.

2. (Currently Amended) The method as recited in Claim 1, wherein said selecting of said characteristics of said market step comprises the steps of:

receiving a first user input, wherein said first user input comprises information identifying an item to be auctioned;

accessing a database;

retrieving from said database historical bids data;

retrieving from said database auction characteristics data, wherein said auction characteristics data comprise information relating to historical auctions of similar items;

outputting said historical bids data; and

outputting said auction characteristics data.

3. (Currently Amended) The method as recited in Claim 1, wherein said selecting of said [[a]] relevant bidding model step comprises the steps of:
receiving auction characteristics data;
accessing a database;
retrieving from said database [[a]] said relevant bidding model, wherein said relevant bidding model is selected based on a corresponding relevance of said auction characteristics data; and
outputting said relevant bidding model.

4. (Currently Amended) The method as recited in Claim 1, wherein said selecting of said first estimated structure of said market ~~estimating a structure of said market~~ step comprises the steps of:
receiving said relevant bidding model;
receiving historical bids data;
expressing unobservable variables in terms of observable bids, wherein said unobservable variables are expressed in terms of said observable bids by inverting said relevant bidding model;
transforming said historical bids data to a sample of inverted bids, wherein said historical bids data are transformed by inverting said relevant bidding model;
estimating an estimated latent structure of said market, wherein said sample of inverted bids receives application of statistical density estimation techniques to obtain said ~~estimated structure~~ estimated latent structure of said market; and
outputting said ~~estimated structure~~ estimated latent structure of said market.

5. (Currently Amended) The method as recited in Claim 1, wherein said relevant bidding model has embedded an unknown structure, and wherein said predicting [[a]] of said first bidding behavior step comprises the steps of:
receiving said estimated structure of said market;
receiving said relevant bidding model;
substituting ~~said estimated structure~~ for said unknown structure with said estimated structure of said market; and
outputting a prediction of bidding behavior.

6. (Currently Amended) The method as recited in Claim 1, wherein said predicting of said ~~[[a]]~~ first outcome of said market step comprises the steps of:

receiving a second user input, wherein said second user input comprises:

an evaluation criterion;
a candidate auction format; and
a constraint;

receiving said first estimated structure of said market;

receiving said first bidding behavior prediction for said candidate auction format, wherein said first bidding behavior prediction further comprises a prediction under said constraint;

obtaining a value of said evaluation criterion, wherein said value is based on said first estimated structure of said market, said first bidding behavior prediction, said candidate auction format, and said constraint, wherein said value comprising said first ~~predicted~~ outcome of said market; and

outputting said value.

7. (Currently Amended) The method as recited in Claim 1, wherein said evaluating of said first outcome and at least said second outcome of said market of said market step comprises the steps of:

receiving a third user input, wherein said third user input comprises a plurality of candidate auction formats;

receiving a predicted outcome for each of said candidate auction formats;

calculating descriptive statistics for each of said candidate auction formats, wherein said descriptive statistics comprise a mean and a variance;

ranking each of said candidate auction formats with respect to said calculated mean and generating corresponding rankings for said plurality of candidate auction formats; and

outputting said descriptive statistics and said rankings.

8. (Currently Amended) The method as recited in Claim 7, wherein said evaluating said first outcome of said market and at least said second outcome of said market step further comprises the steps of:

selecting a best auction format, wherein said best auction format comprises the candidate auction format within said plurality of candidate auction formats having the highest of said rankings; and
outputting said best auction format.

9. (Currently Amended) A computer system comprising:
a bus;
~~— a memory interconnected with said bus; and~~
~~— a processor interconnected with said bus, wherein said processor executes a method for determining an auction format for a market, said method comprising the steps of:~~

a market-characteristic-selector configured for selecting characteristics of said market;

a relevant-bidding-model-selector-based-on-privately-held-bidder-information configured for selecting a relevant bidding model specifying past bidding behavior as a function of information held privately by a bidder and said characteristics of said market;

an estimated-structure-of-market-selector configured for selecting at least a first and a second estimated structure of said market, wherein said first estimated structure of said market describes at least a first factor that affects how bidders behave and wherein said second estimated structure of said market describes at least a second factor that affects how bidders behave;

a bidding-behavior-based-on-estimated-market-structure-predictor configured for predicting a first bidding behavior utilizing said first estimated structure of said market, said characteristics of said market and said relevant bidding model;

an market-outcome-based-on-bidding-behavior-predictor configured for predicting a first outcome of said market based on said first bidding behavior;

said bidding-behavior-based-on-estimated-market-structure-predictor configured for predicting at least a second bidding behavior utilizing at least said second estimated structure of said market, said characteristics of said market and said relevant bidding model;

said market-outcome-based-on-bidding-behavior-predictor configured for predicting a second outcome of said market based on at least said second bidding behavior; and

a determiner-of-auction-format-based-on-evaluating-market-outcome configured for evaluating said first outcome of said market and at least said second outcome of said market to determine an auction format for said market.

10. (Currently Amended) The system as recited in Claim 9, wherein said market-characteristic-selector is further configured for said selecting characteristics of said market step of said method comprises the steps of:

- receiving a first user input, wherein said first user input comprises information identifying an item to be auctioned;
- accessing a database;
- retrieving from said database historical bids data;
- retrieving from said database auction characteristics data, wherein said auction characteristics data comprise information relating to historical auctions of similar items;
- outputting said historical bids data; and
- outputting said auction characteristics data.

11. (Currently Amended) The system as recited in Claim 9, wherein said relevant-bidding-model-selector-based-on-privately-held-bidder-information is further configured for said selecting a relevant bidding model step of said method comprises the steps of:

- receiving auction characteristics data;
- accessing a database;
- retrieving from said database [[a]] said relevant bidding model, wherein said relevant bidding model is selected based on a corresponding relevance of said auction characteristics data; and
- outputting said relevant bidding model.

12. (Currently Amended) The system as recited in Claim 9, wherein said estimated-structure-of-market-selector is further configured for estimating a structure of said market step of said method comprises the steps of:

- receiving said relevant bidding model;

receiving historical bids data;
expressing unobservable variables in terms of observable bids,
wherein said unobservable variables are expressed in terms of said
observable bids by inverting said relevant bidding model;
transforming said historical bids data to a sample of inverted bids,
wherein said historical bids data are transformed by inverting said relevant
bidding model;
estimating an estimated latent structure of said market, wherein said
sample of inverted bids receives application of statistical density estimation
techniques to obtain said ~~estimated structure~~ estimated latent structure of
said market; and
outputting said ~~estimated structure~~ estimated latent structure of said
market.

13. (Currently Amended) The system as recited in Claim 9, wherein said
bidding model has embedded an unknown structure, and wherein said bidding-
behavior-based-on-estimated-market-structure-predictor is further configured for
~~predicting a bidding behavior step of said method comprises the steps of:~~

receiving said estimated structure of said market;
receiving said relevant bidding model;
~~substituting said estimated structure for said unknown structure with~~
said estimated structure of said market; and
outputting a prediction of bidding behavior.

14. (Currently Amended) The system as recited in Claim 9, wherein said
market-outcome-based-on-bidding-behavior-predictor is further configured for
~~predicting a first outcome of said market step of said method comprises the steps of:~~

receiving a second user input, wherein said second user input
comprises:
an evaluation criterion;
a candidate auction format; and
a constraint;
receiving said first estimated structure of said market;
receiving said first bidding behavior prediction for said candidate
auction format, wherein said first bidding behavior prediction further
comprises a prediction under said constraint;

obtaining a value of said evaluation criterion, wherein said value is based on said first estimated structure of said market, said first bidding behavior prediction, said candidate auction format, and said constraint, wherein said value comprising said first ~~predicted~~ outcome of said market; and
outputting said value.

15. (Currently Amended) The system as recited in Claim 9, wherein said determiner-of-auction-format-based-on-evaluating-market-outcome is further configured for evaluating said first outcome of said market step of said method ~~comprises the steps of:~~

receiving a third user input, wherein said third user input comprises a plurality of candidate auction formats;

receiving a predicted outcome for each of said candidate auction formats;

calculating descriptive statistics for each of said candidate auction formats, wherein said descriptive statistics comprise a mean and a variance;

ranking each of said candidate auction formats with respect to said calculated mean and generating corresponding rankings for said plurality of candidate auction formats; and

outputting said descriptive statistics and said rankings.

16. (Currently Amended) The system as recited in Claim 15, wherein said determiner-of-auction-format-based-on-evaluating-market-outcome is further configured for evaluating said first outcome of said market step of said method ~~further comprises the steps of:~~

selecting a best auction format, wherein said best auction format comprises the candidate auction format within said plurality of candidate auction formats having the highest of said rankings; and

outputting said best auction format.

17. (Currently Amended) A computer readable medium for causing a computer system to execute the steps in a method for determining a auction format for a market, said method comprising the steps of:

selecting characteristics of said market;

selecting a relevant bidding model specifying past bidding behavior as a function of information held privately by a bidder and said characteristics of said market;

selecting at least a first and a second estimated structure of said market, wherein said first estimated structure of said market describes at least a first factor that affects how bidders behave and wherein said second estimated structure of said market describes at least a second factor that affects how bidders behave;

predicting a first bidding behavior utilizing said first estimated structure of said market, said characteristics of said market and said relevant bidding model;

predicting a first outcome of said market based on said first bidding behavior;

predicting at least a second bidding behavior utilizing at least said second estimated structure of said market, said characteristics of said market and said relevant bidding model;

predicting a second outcome of said market based on at least said second bidding behavior; and

evaluating said first outcome of said market and at least said second outcome of said market to determine an auction format for said market.

18. (Currently Amended) The computer readable medium as recited in Claim 17, wherein said selecting of said characteristics of said market step comprises the steps of:

receiving a first user input, wherein said first user input comprises information identifying an item to be auctioned;

accessing a database;

retrieving from said database historical bids data;

retrieving from said database auction characteristics data, wherein said auction characteristics data comprise information relating to historical auctions of similar items;

outputting said historical bids data; and

outputting said auction characteristics data.

19. (Currently Amended) The computer readable medium as recited in Claim 17, wherein said selecting of said [[a]] relevant bidding model step comprises the steps of:

receiving auction characteristics data;

accessing a database;

retrieving from said database ~~[[a]]~~ said relevant bidding model, wherein said relevant bidding model is selected based on a corresponding relevance of said auction characteristics data; and
outputting said relevant bidding model.

20. (Currently Amended) The computer readable medium as recited in Claim 17, wherein said selecting of said first estimated structure of said market ~~estimating a structure of said market~~ step comprises the steps of:

- receiving said relevant bidding model;
- receiving historical bids data;
- expressing unobservable variables in terms of observable bids, wherein said unobservable variables are expressed in terms of said observable bids by inverting said relevant bidding model;
- transforming said historical bids data to a sample of inverted bids, wherein said historical bids data are transformed by inverting said relevant bidding model;
- estimating an estimated latent structure of said market, wherein said sample of inverted bids receives application of statistical density estimation techniques to obtain said ~~estimated structure~~ estimated latent structure of said market; and
- outputting said ~~estimated structure~~ estimated latent structure of said market.

21. (Currently Amended) The computer readable medium as recited in Claim 17, wherein said relevant bidding model has embedded an unknown structure, and wherein said predicting ~~[[a]]~~ of said first bidding behavior step comprises the steps of:

- receiving said estimated structure of said market;
- receiving said relevant bidding model;
- substituting ~~said estimated structure~~ for said unknown structure with said estimated structure of said market; and
- outputting a prediction of bidding behavior.

22. (Currently Amended) The computer readable medium as recited in Claim 17, wherein said predicting of said ~~[[a]]~~ first outcome of said market step comprises the steps of:

receiving a second user input, wherein said second user input comprises:

- an evaluation criterion;
- a candidate auction format; and
- a constraint;

- receiving said first estimated structure of said market;

- receiving said first bidding behavior prediction for said candidate auction format, wherein said first bidding behavior prediction further comprises a prediction under said constraint;

- obtaining a value of said evaluation criterion, wherein said value is based on said first estimated structure of said market, said first bidding behavior prediction, said candidate auction format, and said constraint, wherein said value comprising said first predicted outcome of said market;
- and

- outputting said value.

23. (Currently Amended) The computer readable medium as recited in Claim 17, wherein said evaluating of said first outcome and at least said second outcome of said market of said market step comprises the steps of:

- receiving a third user input, wherein said third user input comprises a plurality of candidate auction formats;

- receiving a predicted outcome for each of said candidate auction formats;

- calculating descriptive statistics for each of said candidate auction formats, wherein said descriptive statistics comprise a mean and a variance;

- ranking each of said candidate auction formats with respect to said calculated mean and generating corresponding rankings for said plurality of candidate auction formats; and

- outputting said descriptive statistics and said rankings.

24. (Currently Amended) The computer readable medium as recited in Claim 23, wherein said evaluating said first outcome of said market and at least said second outcome of said market step further comprises the steps of:

selecting a best auction format, wherein said best auction format comprises the candidate auction format within said plurality of candidate auction formats having the highest of said rankings; and
outputting said best auction format.